

## Cancer surveillance, obesity, and potential bias

We congratulate Hyuna Sung and colleagues<sup>1</sup> for their analyses of cancer trends among young adults in the USA.<sup>1</sup> The authors observed an increase in the incidence of several obesity-related cancers in this population. However, they might have overlooked the effect of cancer surveillance bias on these trends.

Surveillance bias occurs when a condition is searched with differential intensity across populations or over time, or according to care setting and patient characteristics.<sup>2</sup> Several types of cancer are highly sensitive to the intensity of screening and clinical detection activities, such as prostate, thyroid, and kidney cancers; these cancers have a substantial reservoir of indolent, subclinical forms and are at high risk of being overdiagnosed.<sup>3,4</sup> One major consequence is that changes in the incidence of such scrutiny-dependent cancers do not simply reveal the effect of changes in carcinogenic exposures; they also result from changes in the frequency and modality of screening and detection activities.<sup>2</sup>

Based on the ecological association between obesity and cancer trends, arguing that obesity would be the cause of the increased incidence of cancer among young adults is highly disputable. Nevertheless, since obesity is associated with a greater frequency of medical examinations,<sup>5</sup> the probability of detecting scrutiny-dependent cancers could be higher among obese individuals. If we assume differential secular trends in cancer detection intensity by age, the parallel rise in obesity and several types of cancer among young adults could be merely the result of a surveillance bias.

I declare no competing interests.

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- 1 Sung H, Siegel RL, Rosenberg PS, Jemal A. Emerging cancer trends among young adults in the USA: analysis of a population-based cancer registry. *Lancet Public Health* 2019; **4**: e137–47.
- 2 Haut ER, Pronovost PJ. Surveillance bias in outcomes reporting. *JAMA* 2011; **305**: 2462–63.
- 3 Welch HG, Brawley OW. Scrutiny-dependent cancer and self-fulfilling risk factors. *Ann Intern Med* 2018; **169**: 134–35.
- 4 Chiolero A, Santschi V, Paccaud F. Public health surveillance with electronic medical records: at risk of surveillance bias and overdiagnosis. *Eur J Public Health* 2013; **23**: 350–51.
- 5 Bertakis KD, Azari R. Obesity and the use of health care services. *Obes Res* 2005; **13**: 372–79.

